

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow. Claims 51-90 are pending in this application. Claims 51-52, 53, 55, and 64-90 have been amended. Accordingly, Claims 51-90 remain pending in the application.

No new matter has been added.

Claims 65-77 and 79-90 have been amended to correct typographical errors included therein. Specifically, Claims 65-77 and 79-90 have been amended to depend from different claims.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, are presented, with an appropriate defined status identifier.

Drawings

On page 2 of the Office Action, the Examiner stated (emphasis in original):

The proposed drawing correction filed on 10/28/02 has been disapproved because it is not in the form of a pen-and-ink sketch showing changes in red ink or with the changes otherwise highlighted. See MPEP § 608.02(v). Page 2 of the amendment states "replace informal FIGURES 1-12 with proposed *amended* FIGURES 1-12". Applicant has not provided drawings showing the changes in red ink.

The Applicants' statement in the Reply and Amendment dated October 21, 2002 was in error. The changes made to the drawings were merely those necessary to convert the drawings from informal drawings to formal drawings (e.g., changing handwritten reference numerals to typeset reference numerals, etc.). Accordingly, no "amendments" to the drawings were made, and a copy of the drawings showing changes in red ink is believed to be unnecessary.

The Applicants respectfully request that the formal drawings filed on October 21, 2002 be considered by the official draftsman and entered in this case.

Double Patenting

On page 3 of the Office Action, the Examiner indicated that Claims 51-90 are rejected under the judicially-created doctrine of double patenting over Claims 1-33 of U.S. Patent No. 6,117,594 ("the '594 patent").

On page 4 of the Office Action, the Examiner also indicated that Claims 51-90 are provisionally rejected under the judicially created doctrine of double patenting over claims 30-71 of copending U.S. Patent Application No. 09/627,522 ("the '522 application").

The present Application and the '594 patent are commonly owned. The present Application and the '522 application are commonly owned.

The Applicants request that the double patenting rejection of Claims 51-90 over Claims 1-33 of the '594 patent, and the provisional double patenting rejection of Claims 51-90 over Claims 30-71 of the '522 application, be held in abeyance until allowable independent claims are indicated by the Examiner in the present Application (since a timely filed terminal disclaimer would overcome the rejection such that further consideration of the claims on that rejection should not be necessary). 37 C.F.R. § 1.111(b).

Claim Objections

On page 4 of the Office Action, the Examiner stated:

Claim 78 is objected to because of the following informalities: in line 1 it is suggested that "of a type" be deleted. Appropriate correction is required.

Claims 68 and 82 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 79 is objected to because it depends from a canceled claim (claim 26).

Claim 78 has been amended to delete the phrase "of a type." Claim 79 has been amended to depend from Claim 78. The Applicants submit that the objections to Claims 78 and 79 have been overcome, and request that the objection to these claims be withdrawn.

The Applicants submit that Claims 68 and 82 further limit the subject matter of the claims from which they depend, and that the objection to these claims is improper.

Claim 68 depends from Claim 64. Claim 64 recites "silver in the range of about 0.0005 percent to about 0.012 percent." Claim 68 (as amended) recites "the silver content of the alloy is in the range of about 0.005% to about 0.012 percent and the ratio of tin to calcium is greater than 15:1." Thus, Claim 68 as amended further limits Claim 64.

Claim 82 depends from Claim 78. Claim 78 recites "silver in the range of about 0.0005 percent to about 0.012 percent." Claim 82 (as amended) recites "the silver content of the alloy is in the range of about 0.005 percent to about 0.012 percent and the ratio of tin to calcium is greater than 15:1." Thus, Claim 82 as amended further limits Claim 78.

Accordingly, the Applicants respectfully request withdrawal of the objections to Claims 68 and 82.

Claim Rejections - 35 U.S.C. § 112

On page 5 of the Office Action, Claims 51-90 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner stated:

Claims 51-53, 55, 64-66, 68, 78-80 and 82 recite the phrases "greater than about" and "less than about", which are indefinite. The use of the phrases "greater than about" and "less than about" is unclear. For example, claim 51 recites "tin in an amount of greater than about 0.5 percent". While 0.45% may be considered "about 0.5 percent", 0.45% is not "greater than 0.5 percent". Thus, it is unclear if the claim encompasses, for example, 0.45% of tin in the lead alloy.

Claims 51-53, 55, 64-66, 68, 78-80 and 82 have been amended in accordance with the Examiner's suggestion. The Applicants submit that the rejection of Claims 51-90 has been overcome. Accordingly, the Applicant requests withdrawal of the rejection of Claims 51-90 under 35 U.S.C. § 112 ¶ 2.

Claim Rejections - 35 U.S.C. § 102(e) - U.S. Patent No. 5,948,566

On page 5 of the Office Action, the Examiner rejected Claims 51-90 as being anticipated by U.S. Patent No. 5,948,566 ("Larsen et al. '566") under 35 U.S.C. § 102(e).

Claims 51, 64, and 78 are in independent form. Claims 52-63 depend from Claim 51. Claims 65-77 depend from Claim 64. Claims 79-90 depend from Claim 78.

Larsen et al. '566 does not identically disclose the combination of elements recited in independent Claims 51, 64, and 78 (as amended). Larsen et al. '566 is titled "Method for Making Lead-Acid Grids and Cells and Batteries Using Such Grids" and is directed to "directly cast strips for industrial grids" that are "slit" and subsequently "expanded" (into a mesh) to form a "grid mesh." Column 6, line 7; Column 6, lines 41-45; Column 7, lines 1-6; Column 9, lines 5-10 and Figures 1-3. Larsen et al. '566 relates to "industrial batteries" for "stationary applications" (e.g., "load leveling," "emergency lighting in commercial buildings," "standby power for cable television systems," and "uninterruptible power supplies") and "motive power applications" (e.g., "electric vehicles, fork-lift trucks, and the like"). Column 1, lines 34-38 and 55-56.

Claim 51 (as amended) is directed to a "lead-acid cell for an SLI battery" and recites, in combination with other elements, a "positive plate comprising a grid supporting structure formed by book mold gravity casting," which is not identically disclosed in Larsen et al. '566. Claim 64 (as amended) is directed to a "grid supporting structure for use in a starting, lighting, and ignition lead-acid battery" and recites, in combination with other elements, a "grid supporting structure formed by book mold gravity casting," which is not identically disclosed in Larsen et al. '566. Claim 78 (as amended) is directed to a "lead-acid starting, lighting, and ignition battery" and recites, in combination with other elements, a "grid

supporting structure formed by book mold gravity casting,” which is not identically disclosed in Larsen et al. ‘566.

Larsen et al. ‘566 appears to be exclusively directed to a process for making a suitable “directly cast” expanded grid mesh for use in industrial applications. See Larsen et al. ‘566 at Column 11, lines 35-37 (“[T]he grids thus may find substantial utility in sealed lead-acid batteries and in other cells and batteries for industrial applications.”) (Emphasis added.) Claims 51, 64, and 78 of the present Application relate to cells or grid supporting structures for use in “starting, lighting and ignition” or “SLI” batteries. (Compare, for example, Figure 4 of Larsen et al. ‘566 with Figure 9 of the present Application.) As is well known in the art, SLI batteries are intended for use in automotive/truck/marine/etc. applications that are distinct from so-called “industrial” applications (of the type described in Larsen et al. ‘566).

Larsen et al. ‘566 does not disclose the use of a “book mold” gravity casting process used to make a positive plate (grid) for an SLI battery, as shown in Figure 7 (book mold 12) of the present Application, and recited in Claims 51, 64, and 78 (as amended). Larsen et al. ‘566 discloses a “direct” casting process in which a “rotatable drum 10 is rotated” and “an amount of molten alloy is dragged onto its casting surface 38 depending largely on the drum speed and cooling water temperature” after which the “molten alloy solidifies to form strip 40” which is subsequently “slit” and “expanded” into a “grid mesh.” Column 4, lines 52-55, Column 6, lines 7, 36-67, and 41-45; Column 7, lines 1-6; Column 9, lines 5-10 and Figures 1-3. Figure 3 of Larsen et al. ‘566 shows equipment utilized to make “industrial grids of the present invention” from the “strip 40.”

Accordingly, Claims 51, 64, and 78 (and corresponding dependent Claims 52-63, 65-77, and 79-90) are not anticipated by Larsen et al. ‘566 under 35 U.S.C. § 102(e) and are patentable.

Claim Rejections - 35 U.S.C. § 102(e) - U.S. Patent No. 6,423,451

On page 6 of the Office Action, the Examiner rejected Claims 51, 55-64, 68-78, and 82-90 as being anticipated by U.S. Patent No. 6,423,451 (“Larsen ‘451”) under 35 U.S.C. § 102(e).

Claims 51, 64, and 78 are in independent form. Claims 55-63 depend from Claim 51. Claims 68-77 depend from Claim 64. Claims 82-90 depend from Claim 78.

Larsen '451 does not identically disclose the combination of elements recited in independent Claims 51, 64, and 78. Larsen et al. '451 is titled "Lead-Acid Cell and Positive Plate and Alloy Therefor" and is directed to a "grid supporting structure" that includes "a lead-based alloy consisting essentially of lead, from about 0.02% to about 0.05% calcium, from about 1.5% to about 3.0% tin, and from about 0.01% to about 0.05% silver." (See Larsen '451, Abstract.)

Claim 51 (as amended) is directed to a "lead-acid cell for an SLI battery" and recites, in combination with other elements, "tin in the range of about 0.5 percent to about 1.2 percent," which is not identically disclosed in Larsen '451. Claim 64 (as amended) is directed to a "grid supporting structure for use in a starting, lighting, and ignition lead-acid battery" and recites, in combination with other elements, "tin in an amount of about 0.5 percent to about 1.2 percent," which is not identically disclosed in Larsen '451. Claim 78 (as amended) is directed to a "lead-acid battery" and recites, in combination with other elements, "tin in an amount of about 0.5 percent to about 1.2 percent," which is not identically disclosed in Larsen '451.

Accordingly, Claims 51, 64, and 78 (and corresponding dependent Claims 55-63, 68-77, and 82-90) are not anticipated by Larsen '451 under 35 U.S.C. § 102(e) and are patentable.

* * *

It is submitted that each outstanding objection and rejection to the Application has been overcome, and that the Application is in a condition for allowance. Claims 51-90 will be pending in this Application. The Applicants request consideration and allowance of all pending Claims 51-90.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1447. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1447. If any extensions of time are needed for timely acceptance of papers submitted herewith, applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1447.

Respectfully submitted,

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By



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